Investment Evaluation Summary (IES)

Project Details:

Project Name:	Augment UG HV Feeder (Capacity)
Project ID:	00823
Thread:	System Development
CAPEX/OPEX:	CAPEX
Service Classification:	Standard Control
Scope Type:	A
Work Category Code:	CAHVF
Work Category Description:	HV Feeder Upgrade - Capacity
Preferred Option Description:	Reinforce GI spur Feeder as required
Preferred Option Estimate (Nominal Dollars):	$0

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27
Unit ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Volume	1	0	0	0	0	0	0	0	0	0
Estimate ($)										
Total ($)	$116,214	$0	$0	$0	$0	$0	$0	$0	$0	$0

Governance:

Project Initiator:	Ewan Sherman	**Date:**	30/03/2015
Thread Approved:	Stephen Jarvis	**Date:**	19/10/2015
Project Approver:	Stephen Jarvis	**Date:**	19/10/2015

Document Details:

Version Number:	1

Related Documents:

Description	URL

Section 1 (Gated Investment Step 1)

1. Background

Reinforcement works on the High Voltage (HV) feeder network include elements operating at 6.6 kV, 11 kV, 22 kV, 33 kV or 44 kV (including SWER). The main elements of HV feeder networks includes:

- Overhead conductor
- Underground cable
- Voltage regulators
- Overhead switchgear (Reclosers, Gas Switches, ABS, Fuses, Links)
- Ground mounted switchgear (generally components of Distribution Substations)

This program covers management of network risks associated with HV elements that are operating above thier rated capability that is resulting in substandard voltages and power quality issue.

In particular this program addresses large HV overhead GI feeder spurs.

1.1 Investment Need

Network elements operating above their capability pose a significant risk in terms of

- public safety,
- environmental (bushfire start),
- premature asset failure,
- network performance in regards to acceptable voltages or power quality issues;
- operation of third party equipment; and
- reliability performance.

The management of the above risks support TasNetworks to deliver the following:

- Compliance with regulatory obligations; and
- Safety, reliability and security of supply outcomes that meet customers' needs, by maintaining asset utilisation rates at appropriate levels at the lowest whole of life cost.

1.2 Customer Needs or Impact

TasNetworks continues to undertake a consumer engagement as part of business as usual and through the voice of the customer program. Consumers have identified safety, restoration of faults/emergencies and supply reliability as the highest performing services offered by TasNetworks. This project specifically addresses the requirements of consumers in the area of safety, restoration of faults/emergencies and supply reliability.

Customers will continue to be consulted through routine TasNetworks processes, including the Voice of the customer program, the Annual Planning Review and ongoing regular customer liaison meetings.

1.3 Regulatory Considerations

This project is required to achieve the following capital expenditure objectives as described by the National Electricity Rules section 6.5.7(a) 6.5.7 (a).

Forecast capital expenditure

1. meet or manage the expected demand for standard control services over that period;
2. comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;
3. to the extent that there is no applicable regulatory obligation or requirement in relation to:
    - the quality, reliability or security of supply of standard control services; or
    - the reliability or security of the distribution system through the supply of standard control services, to the relevant extent:
    - maintain the quality, reliability and security of supply of standard control services; and
    - maintain the reliability and security of the distribution system through the supply of standard control services; and
4. maintain the safety of the distribution system through the supply of standard control services.

2. Project Objectives

To manage risks associated with:

- excessive thermal loading of HV feeder elements,
- voltage levels outside acceptible limits;
- power quality issues resulting from asset loading;
- damage to third party equipement or operations; and
- operational limitations in the HV feeder network resulting from the above.

3. Strategic Alignment

3.1 Business Objectives

Strategic and operational performance objectives relevant to this project are derived from TasNetworks 2014 Corporate Plan, approved by the board in 2014. This project is relevant to the following areas of the corporate plan: • We understand our customers by making them central to all we do. • We care for our assets, delivering safe and reliable networks services while transforming our business.

3.2 Business Initiatives

The business initiatives that relate to this project are as follows: • Safety of our people and the community, while reliably providing network services, is fundamental to the TasNetworks business and remains our immediate priority • We care for our assets to ensure they deliver safe and reliable network services • We will transform our business with a focus on: - an appropriate approach to the management and allocation of risk The strategic key performance indicators that will be impacted through undertaking this project are as follows: • Customer engagement and service – customer net promoter score • Price for customers – lowest sustainable prices • Network service performance – meet network planning standards

4. Current Risk Evaluation

The current risk evaluation is between Medium to High; depending on the site, feeder configuration, customer numbers, and requriements.

4.1 5x5 Risk Matrix

TasNetworks business risks are analysed utilising the 5x5 corporate risk matrix, as outlined in TasNetworks Risk Management Framework.

Relevant strategic business risk factors that apply are follows:

Risk Category	Risk	Likelihood	Consequence	Risk Rating
Customer	Material Supply Interuption, and contribution towards: • substandard performance (SAIFI and SAIDI) • unavailability of network services • negative impact on community values and expectations • Increased customer complaints • Reputation damage	Possible	Minor	Low
Environment and Community	Significant localised enviromental impact with short-term effects where there is an Increased risk of explosion and expulsion of oil, conductor clashing or failure leading to interruptions and fire ignition particular in regards to: • High bushfire risk areas; • public roads, traffic hazards; • Area's of environmental significance;	Possible	Minor	Low
Financial	Higher cost associated with repairing equipment under fault, compensation payments, under regulatory regime - STPIS outcomes;	Possible	Negligible	Low
Network Performance	Running the system in an insecure state or above its capability that may lead to consequential failures: • Protection operation initiated interruptions to supply; • Damage to third party equipment; • Rotational interruptions to supply to manage equipment loading and	Possible	Minor	Low

	downed networks			
Regulatory Compliance	Non-compliance with obligations, resulting in: • Minor fine, or • breach of code and standard or licence for TEC, NER, connection agreements, legislation and regulation; • Failure of assets	Possible	Negligible	Low
Reputation	Non-sustained state press coverage including wider social media covereage, particularly in regards to: • High bushfire risk areas; • Area's of environmental significance	Rare	Negligible	Low
Safety and People	Explosion, or decreased operating clearances resulting in: • Increasing risk of third party contact • Electric shock or electrocution • Physical damage or harm.	Likely	Minor	Medium

Section 1 Approvals (Gated Investment Step 1)

Project Initiator:	Ewan Sherman	**Date:**	30/03/2015
Line Manager:		**Date:**	
Manager (Network Projects) or Group/Business Manager (Non-network projects):		**Date:**	
[Send this signed and endorsed summary to the Capital Works Program Coordinator.]			

Actions			
CWP Project Manager commenced initiation:		**Assigned CW Project Manager:**	
PI notified project initiation commenced:		**Actioned by:**	

Section 2 (Gated Investment Step 2)

5. Preferred Option:

Augment HV cable to appropriate rating to manage High Voltage System asset loading and/or system voltage for normal or contingency network configurations.

5.1 Scope

This programs includes the reinforecement of existing 3/12 and 3/2.75 GI feeder spurs where the load on these spurs has significantly exceeded the physical limitations (and intentional use) of the conductor.

Throughout the planning period to 2027, a program totalling 100 km of overhead GI conductor reinforcement is proposed

This results in a total of 47 km within the two year determination (2017-19).

5.2 Expected outcomes and benefits

It is expected that network risk in terms of:

- thermal overloading of conductors;
- unacceptable voltage levels; and
- power quality issues; and
- operation of third party equipment;

can be adequateley managed throughout the planning period.

5.3 Regulatory Test

Not applicable.

6. Options Analysis

The following tables provide a brief summary of the options considered as part of a desk top assessment and in accordance with the Network Development Management plan.

6.1 Option Summary

Option description	
Option 0	Do nothing
Option 1 (preferred)	Reinforce GI spur Feeder as required

6.2 Summary of Drivers

Option	
Option 0	This option includes the continued operation of the network outside it's capability and outside of acceptable voltage levels; resulting in the business risks as described in Section 1.1
Option 1 (preferred)	This option includes the reinforcement of GI Spur feeders such that the loading and voltage issues are managed, enabling TasNetworks to meet our regulatory requirement, and meet our custoemrs needs by providing a safe, and reliable network.

6.3 Summary of Costs

Option	Total Cost ($)
Option 0	$0
Option 1 (preferred)	$0

6.4 Summary of Risk

The target risk assessment as a result of this program is Low.

6.5 Economic analysis

Option	Description	NPV
Option 0	Do nothing	$0
Option 1 (preferred)	Reinforce GI spur Feeder as required	$0

6.5.1 Quantitative Risk Analysis

Not applicable.

6.5.2 Benchmarking

Not applicable.

6.5.3 Expert findings

Not applicable.

6.5.4 Assumptions

Not applicable.

Section 2 Approvals (Gated Investment Step 2)

Project Initiator:	Ewan Sherman	**Date:**	30/03/2015
Project Manager:		**Date:**	

Actions			
Submitted for CIRT review:		**Actioned by:**	
CIRT outcome:			